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CLAIMS

1. A digital signal conversion method comprising:

a data extraction step of extracting a part of orthogonal transform coefficients from respective blocks of a digital signal of a first format consisting of orthogonal transform coefficient blocks of a predetermined unit, thus constituting partial blocks;

an inverse orthogonal transform step of carrying out inverse orthogonal transform of the orthogonal transform coefficients constituting each partial block, on the partial block basis;

a partial block connection step of connecting the partial blocks processed by inverse orthogonal transform, thus constituting a new block of the predetermined unit; and

an orthogonal transform step of orthogonally transforming the new block on the block basis, thus generating a second digital signal consisting of the new orthogonal transform block of the predetermined unit.

2. The digital signal conversion method as claimed in claim 1, wherein the orthogonal transform is discrete cosine transform, the digital signal of the first format is a video signal compression-coded at a predetermined fixed rate using variable-length coding, and the digital signal of the second format is a video signal compression-coded at a variable rate.

3. The digital signal conversion method as claimed in claim 1, wherein at the data extraction step, discrete cosine transform coefficients on the low-frequency side are

extracted from the respective blocks of the digital signal of the first format, and the number of discrete cosine transform coefficients of a horizontal component of a luminance signal, the number of discrete cosine transform coefficients of a horizontal component of a color-difference signal and the number of discrete cosine transform coefficients of a vertical component thereof are reduced.

4. The digital signal conversion method as claimed in claim 1, wherein in the case where one frame of the digital signal of the first format is constituted by two frames,

at the data extraction step, field separation for separating discrete cosine transform coefficients constituting line of an odd field of the frame and discrete cosine transform coefficients constituting lines of an even field of the frame, and generating a block consisting of the discrete cosine transform coefficients of one of these fields is carried out.

5. The digital signal conversion method as claimed in claim 1, wherein the digital signal of the first format is a compressed video signal having a resolution of 720×480 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:1:1, and the digital signal of the second format is a compressed video signal having a resolution of 360×240 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:2:0.

6. The digital signal conversion method as claimed in claim 1, wherein the digital signal of the first format is a compressed video signal having a resolution of 720×480

pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:2:0, and the digital signal of the second format is a compressed video signal having a resolution of 360×240 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:2:0.

7. The digital signal conversion method as claimed in claim 1, wherein at the data extraction step, orthogonal transform coefficients on the low-frequency side are extracted from the respective blocks of the digital signal of the first format, and the number of discrete cosine transform coefficients of a vertical component of a color-difference signal is reduced to 1/2.

8. The digital signal conversion method as claimed in claim 7, wherein the digital signal of the first format is a compressed video signal having a resolution of 720×480 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:1:1, and the digital signal of the second format is a compressed video signal having a resolution of 720×480 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:2:0.

9. A digital signal conversion method comprising:

an inverse orthogonal transform step of carrying out inverse orthogonal transform of a digital signal of a first format consisting of orthogonal transform coefficient blocks of a predetermined unit, on the block basis;

a block division step of dividing each block of the digital signal of the first format processed by inverse orthogonal transform;

an orthogonal transform step of orthogonally transforming orthogonal transform coefficients constituting each divided block, on the divided block basis; and

a data enlargement step of interpolating the value of each orthogonally transformed block with an orthogonal transform coefficient to constitute the predetermined unit, thus generating a digital signal of a second format.

10. The digital signal conversion method as claimed in claim 9, wherein the orthogonal transform is discrete cosine transform, the digital signal of the first format is a video signal compression-coded at a predetermined fixed rate using variable-length coding, and the digital signal of the second format is a video signal compression-coded at a variable rate.

11. The digital signal conversion method as claimed in claim 9, wherein at the data enlargement step, discrete cosine transform coefficients of the respective divided blocks of the digital signal of the first format are arranged on the low-frequency side, and the high-frequency side thereof is interpolated with 0, thus constituting the respective blocks of the predetermined unit.

12. The digital signal conversion method as claimed in claim 9, wherein the digital signal of the first format is a compressed video signal having a resolution of 720×480 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:1:1, and the digital signal of the

second format is a compressed video signal having a resolution of 720×480 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:2:0.

13. The digital signal conversion method as claimed in claim 9, wherein the digital signal of the first format is a compressed video signal having a resolution of 720×480 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:2:0, and the digital signal of the second format is a compressed video signal having a resolution of 720×480 pixels and a ratio of the sampling frequency of a luminance signal to the sampling frequencies of color-difference signals equal to 4:2:0.

14. A digital signal conversion device comprising:

decoding means for decoding a digital signal of a first format consisting of orthogonal transform coefficients of a predetermined unit;

inverse quantization means for inversely quantizing the decoded digital signal;

resolution conversion means for extracting a part of the orthogonal transform coefficients from adjacent blocks of orthogonal transform coefficient blocks of the predetermined unit of the inversely quantized digital signal, thus constituting partial blocks, and converting the resolution;

quantization means for quantizing the digital signal processed by resolution conversion; and

coding means for coding the quantized digital signal, thus generating a digital

signal of a second format.

15. The digital signal conversion device as claimed in claim 14, wherein the resolution conversion means connects the inversely orthogonally transformed partial blocks, thus constituting a new block of the predetermined unit.

16. The digital signal conversion device as claimed in claim 14, wherein the orthogonal transform is discrete cosine transform, the digital signal of the first format is a video signal compression-coded at a predetermined fixed rate using variable-length coding, and the digital signal of the second format is a video signal compression-coded at a variable rate.

17. The digital signal conversion device as claimed in claim 16, wherein the resolution conversion means extracts orthogonal transform coefficients on the low-frequency side from the respective blocks of the digital signal of the first format, and reduces the number of discrete cosine transform coefficients to 1/2.

18. A digital signal conversion device comprising:

decoding means for decoding a digital signal of a first format consisting of orthogonal transform coefficient blocks of a predetermined unit;

inverse quantization means for inversely quantizing the decoded digital signal;

resolution conversion means for interpolating the respective blocks of the predetermined unit of the inversely quantized digital signal with an orthogonal transform coefficient of a predetermined value, thus constituting the predetermined unit, and converting the resolution;

quantization means for quantizing the digital signal processed by resolution conversion; and

coding means for coding the quantized digital signal, thus generating a digital signal of a second format.

19. The digital signal conversion device as claimed in claim 18, wherein the resolution conversion means interpolates with 0 the high-frequency side of the orthogonal transform coefficients of the divided respective blocks of the digital signal of the first format, thus constituting the respective block of the predetermined unit.

20. A digital signal conversion method for converting a digital signal of a first format consisting of orthogonal transform coefficient blocks of a predetermined unit to a digital signal of a second format consisting of new orthogonal transform coefficient blocks of another predetermined unit, the method comprising the step of

controlling the data quantity of the digital signal of the second format by utilizing data quantity information included in the digital signal of the first format.

21. The digital signal conversion method as claimed in claim 20, wherein the orthogonal transform is discrete cosine transform, the digital signal of the first format is a video signal compression-coded at a predetermined fixed rate, and the digital signal of the second format is a video signal compression-coded at a variable rate.

22. The digital signal conversion method as claimed in claim 20, wherein the data quantity of the digital signal of the second format is controlled in the orthogonal transform domain.

23. The digital signal conversion method as claimed in claim 20, wherein the data quantity of the digital signal of the second format is controlled in the spatial domain.

24. The digital signal conversion method as claimed in claim 20, further comprising:

a quantization parameter calculation step of calculating quantization parameters on the basis of the quantizer number and class information for the respective predetermined blocks of the digital signal of the first format;

a meta-block quantization parameter calculation step of averaging the quantization parameters calculated for the respective blocks and calculating a quantization parameter for a meta-block consisting of a plurality of block units; and

a quantizer scale calculation step of calculating the quantizer scale of the digital signal of the second format from the quantization parameter for each meta-block;

the respective blocks being quantized by using the calculated quantizer scale.

25. The digital signal conversion method as claimed in claim 20, further comprising:

a total of generated bits calculation step of calculating the total number of generated bits for each frame of the digital signal of the first format; and

a quantization parameter adjustment step of adjusting the quantization parameter using a value obtained by multiplying the difference between the total number of generated bits and a target number of bits by a constant;

wherein a new quantizer scale is calculated by using the adjusted quantization

parameter, thus using the new quantizer scale for a next frame of the digital signal of the second format.

26. A digital signal conversion device for converting a digital signal of a first format consisting of orthogonal transform coefficient blocks of a predetermined unit to a digital signal of a second format consisting of new orthogonal transform coefficient blocks of another predetermined unit, the device comprising:

decoding means for decoding the digital signal of the first format;

inverse quantization means for inversely quantizing the decoded digital signal;

signal conversion means for carrying out signal processing accompanying format conversion of the inversely quantized digital signal;

quantization means for quantizing the digital signal processed by signal processing;

data quantity control means for controlling the data quantity in the quantization means; and

coding means for coding the digital signal which is quantized and has its data quantity controlled by the data quantity control means, thus generating the digital signal of the second format.

27. The digitial signal conversion device as claimed in claim 26, wherein the orthogonal transform is discrete cosine transform, the digital signal of the first format is a video signal compression-coded at a predetermined fixed rate, and the digital signal of the second format is a video signal compression-coded at a variable rate.

28. The digital signal conversion device as claimed in claim 26, wherein the signal conversion means controls the data quantity of the digital signal of the second format in the orthogonal transform domain by utilizing data quantity information included in the digital signal of the first format.

29. The digital signal conversion device as claimed in claim 26, wherein the signal conversion means controls the data quantity of the digital signal of the second format in the spatial domain by utilizing data quantity information included in the digital signal of the first format.

30. The digital signal conversion device as claimed in claim 26, wherein the signal conversion means calculates quantization parameters on the basis of the quantizer number and class information for the respective blocks included in the digital signal of the first format, averages the quantization parameters calculated for the respective blocks so as to calculate the quantization parameter of a meta-block consisting of a plurality of blocks, calculates the quantizer scale of the digital signal of the second format from the quantization parameter of each meta-block, and quantizes the respective blocks by using the calculated quantizer scale.

31. A digital signal conversion method for converting a digital signal of a first format to a digital signal of a second format, the method comprising:

a decoding step of decoding the digital signal of the first format;

a signal conversion step of converting the decoded digital signal of the first format to the digital signal of the second format;

a coding step of coding the digital signal of the second format; and

a weighting processing step of collectively carrying out inverse weighting for the digital signal of the first format and weighting for the digital signal of the second format.

32. The digital signal conversion method as claimed in claim 31, wherein the digital signal of the first format is an orthogonally transformed digital signal, and the weighting processing step is carried out in the orthogonal transform domain.

33. The digital signal conversion method as claimed in claim 31, wherein the digital signal of the first format is an orthogonally transformed digital signal, and the weighting processing step is carried out in the spatial domain after the orthogonally transformed digital signal is inversely orthogonally transformed.

34. The digital signal conversion method as claimed in claim 31, wherein the digital signal of the first format is a video signal compression-coded at a predetermined fixed rate by discrete cosine transform, and the digital signal of the second format is a video signal compression-coded at a variable rate by discrete cosine transform.

35. The digital signal conversion method as claimed in claim 31, wherein the weighting processing step is carried out after inverse quantization of the digital signal of the first format and before the signal conversion step.

36. The digital signal conversion method as claimed in claim 31, wherein the weighting processing step is carried out after the signal conversion step and before quantization of the digital signal of the second format.

37. A digital signal conversion device for converting a digital signal of a first format to a digital signal of a second format, the device comprising:

decoding means for decoding the digital signal of the first format;

signal conversion means for converting the decoded digital signal of the first format to the digital signal of the second format;

coding means for coding the digital signal of the second format; and

weighting processing means for collectively carrying out inverse weighting for the digital signal of the first format and weighting for the digital signal of the second format.

38. The digital signal conversion device as claimed in claim 37, wherein the digital signal of the first format is an orthogonally transformed digital signal, and the weighting processing means carries out inverse weighting for the digital signal of the first format and weighting for the digital signal of the second format in the orthogonal transform domain.

39. The digital signal conversion device as claimed in claim 37, wherein the digital signal of the first format is an orthogonally transformed digital signal, and the weighting processing means carries out inverse weighting for the digital signal of the first format and weighting of the digital signal of the second format in the spatial domain.

40. The digital signal conversion device as claimed in claim 37, wherein the digital signal of the first format is a video signal compression-coded at a predetermined fixed

rate by discrete cosine transform, and the digital signal of the second format is a video signal compression-coded at a variable rate by discrete cosine transform.

41. The digital signal conversion device as claimed in claim 37, wherein the weighting processing means carries out inverse weighting for the digital signal of the first format and weighting for the digital signal of the second format after inverse quantization of the digital signal of the first format.

42. The digital signal conversion device as claimed in claim 37, wherein the weighting processing means carries out inverse weighting for the digital signal of the first format and weighting for the digital signal of the second format before quantization of the digital signal of the second format.

43. A digital signal conversion method comprising:

a decoding step of carrying out decoding along with motion compensation on an input information signal compression-coded along with motion detection;

a signal conversion processing step of carrying out signal conversion processing on the decoded signal from the decoding step; and

a coding processing step of carrying out compression coding processing on the converted signal from the signal conversion processing step along with motion detection based on motion vector information of the input information signal.

44. The digital signal conversion method as claimed in claim 43, wherein at the signal conversion processing step, resolution conversion processing is carried out on the decoded signal.

45. The digital signal conversion method as claimed in claim 44, wherein at the coding processing step, compression coding processing based on information obtained by scale-converting the motion vector information in accordance with the resolution conversion processing is carried out on the converted signal.

46. The digital signal conversion method as claimed in claim 43, wherein at the signal conversion processing step, rate conversion processing is carried out on the decoded signal.

47. A digital signal conversion device comprising:

decoding means for carrying out decoding along with motion compensation on an input information signal compression-coded along with motion detection;

signal conversion processing means for carrying out signal conversion processing on the decoded signal from the decoding means; and

coding processing means for carrying out compression coding processing on the converted signal from the signal conversion processing means along with motion detection based on motion vector information of the input information signal.

48. A digital signal conversion method comprising:

a decoding step of carrying out only predictive decoding processing along with motion compensation on an input information signal on which compression coding including predictive coding along with motion detection and orthogonal transform coding is performed, thereby obtaining a decoded signal in the orthogonal transform domain on which orthogonal transform coding is performed;

a signal conversion processing step of carrying out signal conversion processing on the decoded signal of the orthogonal transform domain from the decoding step; and

a coding processing step of carrying out compression coding processing along with motion compensation prediction on the converted signal from the signal conversion processing step by using motion detection based on motion vector information of the input information signal.

49. The digital signal conversion method as claimed in claim 48, wherein at the signal conversion processing step, signal conversion processing is carried out on the decoded signal of the orthogonal transform domain from the decoding step by using a transform matrix generated on the basis of an inverse orthogonal transform matrix corresponding to an orthogonal transform matrix used for orthogonal transform coding performed on the input information signal and an orthogonal transform matrix corresponding to an inverse orthogonal transform matrix used for obtaining a signal conversion output signal in the time domain.

50. The digital signal conversion method as claimed in claim 48, wherein at the signal conversion processing step, resolution conversion processing is carried out on the decoded signal of the orthogonal transform domain from the decoding step.

51. The digital signal conversion method as claimed in claim 50, wherein at the coding processing step, compression coding processing based on information obtained by scale-converting the motion vector information in accordance with the resolution conversion processing is carried out on the converted signal.

52. The digital signal conversion method as claimed in claim 48, wherein at the signal conversion processing step, rate conversion processing is carried out on the decoded signal of the orthogonal transform domain from the decoding step.

53. A digital signal conversion device comprising:

decoding means for carrying out only predictive decoding processing along with motion compensation on an input information signal on which compression coding including predictive coding along with motion detection and orthogonal transform coding is performed, thereby obtaining a decoded signal in the orthogonal transform domain on which orthogonal transform coding is performed;

signal conversion means for carrying out signal conversion processing on the decoded signal of the orthogonal transform domain from the decoding means; and

coding processing means for carrying out compression coding processing along with motion compensation prediction on the converted signal from the signal conversion processing means by using motion detection based on motion vector information of the input information signal.

54. A digital signal conversion method comprising:

a decoding step of carrying out partial decoding processing on an input information signal processed by compression coding including predictive coding along with motion detection and orthogonal transform coding, thus obtaining a signal of the orthogonal transform domain;

a signal conversion processing step of carrying out signal conversion processing

on the signal of the orthogonal transform domain from the decoding step; and

a coding processing step of adding motion vector information converted on the basis of motion vector information of the input information signal and carrying out compression coding processing on the converted signal from the signal conversion processing step.

55. The digital signal conversion method as claimed in claim 54, wherein at the signal conversion processing step, signal conversion processing is carried out on the decoded signal of the orthogonal transform domain from the decoding step by using a transform matrix generated on the basis of an inverse orthogonal transform matrix corresponding to an orthogonal transform matrix used for orthogonal transform coding performed on the input information signal and an orthogonal transform matrix corresponding to an inverse orthogonal transform matrix used for obtaining a signal conversion output signal in the time domain.

56. The digital signal conversion method as claimed in claim 54, wherein at the signal conversion processing step, resolution conversion processing is carried out on the decoded signal of the orthogonal transform domain from the decoding step.

57. The digital signal conversion method as claimed in claim 56, wherein at the coding processing step, compression coding processing by adding information obtained by scale-converting the motion vector information in accordance with the resolution conversion processing is carried out on the converted signal.

58. The digital signal conversion method as claimed in claim 54, wherein at the

signal conversion processing step, rate conversion processing is carried out on the decoded signal of the orthogonal transform domain from the decoding step.

59. A digital signal conversion device comprising:

decoding means for carrying out partial decoding processing on an input information signal processed by compression coding including predictive coding along with motion detection and orthogonal transform coding, thus obtaining a signal of the orthogonal transform domain;

signal conversion processing means for carrying out signal conversion processing on the signal of the orthogonal transform domain from the decoding means; and

coding processing means for adding motion vector information converted on the basis of motion vector information of the input information signal and carrying out compression coding processing on the converted signal from the signal conversion processing means.

60. A digital signal conversion method for converting a digital signal of a first format having dynamic mode/static mode information added thereto in advance to a digital signal of a second format accompanying coding using inter-frame difference, the method comprising:

a decoding step of decoding the digital signal of the first format;

a signal conversion step of carrying out signal conversion processing on the decoded signal from the decoding step;

a discrimination step of discriminating whether or not to carry out inter-frame differential coding for each predetermined block of the converted signal from the signal conversion step in accordance with the dynamic mode/static mode information; and

a coding step of coding the converted signal on the basis of the result of discrimination from the discrimination step and outputting the digital signal of the second format.

61. The digital signal conversion method as claimed in claim 60, wherein at the decoding step, the digital signal of the first format is partially decoded to output a signal of the orthogonal transform domain, and at the signal conversion step, signal conversion processing is carried out on the signal of the orthogonal transform domain.

62. The digital signal conversion method as claimed in claim 61, wherein the orthogonal transform is discrete cosine transform.

63. The digital signal conversion method as claimed in claim 60, wherein at the signal conversion step, signal conversion processing is carried out on the digital signal of the first format by using a transform matrix generated on the basis of an inverse orthogonal transform matrix corresponding to an orthogonal transform matrix used for orthogonal transform coding performed on the digital signal of the first format and an orthogonal transform matrix corresponding to an inverse orthogonal transform matrix used for obtaining the digital signal of the second format.

64. The digital signal conversion method as claimed in claim 60, wherein at the

discrimination step, whether or not to carry out the inter-frame differential coding for each macroblock of the converted signal from the signal conversion step is discriminated.

65. A digital signal conversion device for converting a digital signal of a first format having dynamic mode/static mode information added thereto in advance to a digital signal of a second format accompanying coding using inter-frame difference, the device comprising:

decoding means for decoding the digital signal of the first format;

signal conversion means for carrying out signal conversion processing on the decoded signal from the decoding means;

discrimination means for discriminating whether or not to carry out inter-frame differential coding for each predetermined block of the converted signal from the signal conversion means in accordance with the dynamic mode/static mode information; and

coding means for coding the converted signal on the basis of the result of discrimination from the discrimination means and outputting the digital signal of the second format.

66. A digital signal conversion method for converting a digital signal of a first format to a digital signal of a second format accompanying coding using inter-frame difference, the method comprising:

a decoding step of carrying out partial decoding on the digital signal of the first

format, thus obtaining a signal of the orthogonal transform domain;

a signal conversion step of carrying out signal conversion processing on the signal of the orthogonal transform domain from the decoding step;

a discrimination step of discriminating whether or not to carry out inter-frame differential coding for each predetermined block of the converted signal from the signal conversion step in accordance with a maximum value of an absolute value of the inter-frame difference of the converted signal; and

a coding step of coding the converted signal from the signal conversion step on the basis of the result of discrimination from the discrimination step and outputting the digital signal of the second format.

67. The digital signal conversion method as claimed in claim 66, wherein the orthogonal transform is discrete cosine transform.

68. The digital signal conversion method as claimed in claim 66, wherein at the signal conversion step, signal conversion processing is carried out on the digital signal of the first format by using a transform matrix generated on the basis of an inverse orthogonal transform matrix corresponding to an orthogonal transform matrix used for orthogonal transform coding performed on the digital signal of the first format and an orthogonal transform matrix corresponding to an inverse orthogonal transform matrix used for obtaining the digital signal of the second format.

69. The digital signal conversion method as claimed in claim 66, wherein at the discrimination step, whether or not to carry out the inter-frame differential coding for

each macroblock of the converted signal from the signal conversion step is discriminated.

70. A digital signal conversion device for converting a digital signal of a first format to a digital signal of a second format accompanying coding using inter-frame difference, the device comprising:

decoding means for carrying out partial decoding on the digital signal of the first format, thus obtaining a signal of the orthogonal transform domain;

signal conversion means for carrying out signal conversion processing on the signal of the orthogonal transform domain from the decoding means;

discrimination means for discriminating whether or not to carry out inter-frame differential coding for each predetermined block of the converted signal from the signal conversion means in accordance with a maximum value of an absolute value of the inter-frame difference of the converted signal; and

coding means for coding the converted signal from the signal conversion means on the basis of the result of discrimination from the discrimination means and outputting the digital signal of the second format.

71. A digital signal conversion method comprising:

an inverse orthogonal transform step of carrying out inverse orthogonal transform on an intra-frame coded signal and a forward predictive coded signal, of a digital signal of a first format including an intra-frame coded signal processed by intra-frame coding and a forward predictive coded signal and a bidirectionally predictive

coded signal processed by forward and bidirectional inter-frame predictive coding along with motion detection;

a motion compensation output generation step of generating a motion compensation output to be added to the partially decoded forward predictive coded signal and bidirectionally predictive coded signal on the basis of the conversion output from the inverse orthogonal transform step;

an orthogonal transform step of orthogonally transforming the motion compensation output from the motion compensation output generation step;

an addition step of adding the orthogonal transform output from the orthogonal transform step to the partially decoded forward predictive coded signal and bidirectionally predictive coded signal; and

a coding step of carrying out compression coding on a signal based on the addition output and outputting a digital signal of a second format.

72. The digital signal conversion method as claimed in claim 71, further comprising a conversion step of carrying out signal conversion processing on the addition output between the addition step and the coding step, wherein at the coding step, the compression coding processing is carried out on the converted signal from the conversion step.

73. The digital signal conversion method as claimed in claim 71, wherein the orthogonal transform is discrete cosine transform.

74. The digital signal conversion method as claimed in claim 72, wherein at the

conversion step, signal conversion is carried out on the output from the addition step by using a transform matrix generated on the basis of an inverse orthogonal transform matrix corresponding to an orthogonal transform matrix used for orthogonal transform coding performed on the digital signal of the first format and an orthogonal transform matrix corresponding to an inverse orthogonal transform matrix used for obtaining the digital signal of the second format.

75. A digital signal conversion device comprising:

inverse orthogonal transform means for carrying out inverse orthogonal transform on an intra-frame coded signal and a forward predictive coded signal, of a digital signal of a first format including an intra-frame coded signal processed by intra-frame coding and a forward predictive coded signal and a bidirectionally predictive coded signal processed by forward and bidirectional inter-frame predictive coding along with motion detection;

motion compensation output generation means for generating a motion compensation output to be added to the partially decoded forward predictive coded signal and bidirectionally predictive coded signal on the basis of the conversion output from the inverse orthogonal transform means;

orthogonal transform means for orthogonally transforming the motion compensation output from the motion compensation output generation means;

addition means for adding the orthogonal transform output from the orthogonal transform means to the partially decoded forward predictive coded signal and

bidirectionally predictive coded signal; and

coding means for carrying out compression coding on a signal based on the addition output and outputting a digital signal of a second format.

76. The digital signal conversion device as claimed in claim 75, further comprising conversion means for carrying out signal conversion processing on the addition output between the addition means and the coding means, wherein the coding means carries out the compression coding processing on the converted signal from the conversion means.